

In the claims:

1-4. (Cancelled)

5. (Currently Amended) The method according to any one of claims 24-25 24-27, wherein the detection and/or discrimination step includes comparing results obtained from measuring at least one of electrical, magnetic and optical changes to the surface of the biochip before hybridizing the biochemical specimen as a standard with results of the biochip following each step.

6. (Currently Amended) The method according to any one of claims 24-25 24-27, wherein the detection and/or discrimination step includes measuring, before and after hybridizing the biochemical specimen, at least one of electrical, magnetic and optical changes to the surface of the biochip, and comparing these results.

7. (Currently Amended) The method according to any one of claims 24-25 24-27, wherein the detection and/or discrimination step includes measuring, before hybridizing the biochemical specimen, at least one of electrical, magnetic and optical changes to the surface of a biochip having a plurality of electrodes, and relative amounts of the nucleic acids probe on each electrode are calculated in advance and used as a corrective reference for measured values after each step.

8-10. (Cancelled)

11. (Currently Amended) The method according to any one of claims 24-25 24-27, wherein detecting and/or discriminating electrical changes on the surface of the biochip is at least one of changes in current values, voltage values or resistance values on the biochip or the electrode, and changes in capacitance on the surface of the biochip.

12. (Currently Amended) The method according to any one of claims 24-25 24-27, wherein detecting and/or discriminating electrical and magnetic changes on the surface of the biochip comprises the steps of:

detecting and/or discriminating at least one of changes in current values, voltage values or resistance values on the biochip or the electrode, and changes in capacitance on the surface of the biochip; and

magnetically detecting and/or discriminating a signal from the double-chained complex.

13. (Currently Amended) The method according to any one of claims 24-25 24-27, wherein detecting and/or discriminating electrical and optical changes on the surface of the biochip comprises the steps of:

detecting and/or discriminating at least one of changes in current values, voltage values or resistance values on the biochip or the electrode, and changes in capacitance on the surface of the biochip; and

optically detecting and/or discriminating a signal from the double-chained complex.

14. (Currently Amended) The method according to any one of claims 24-25 24-27, wherein detecting and/or discriminating electrical, magnetic and optical changes on the surface of the biochip comprises the steps of:

detecting and/or discriminating at least one of changes in current values, voltage values or resistance values on the biochip or electrode, and changes in capacitance on the surface of the biochip; and

magnetically and optically detecting and/or discriminating signals from the double-chained complex.

15-22. (Cancelled)

23. (Currently Amended) The method according to claim claims 25 or 27, wherein the detection and/or discrimination step includes measuring, before and after hybridizing the biochemical specimen and/or before and after modifying with a label, at least one of electrical, magnetic and optical changes to the surface of the biochip, and comparing these results.

24. (Currently Amended) A method for detecting a biochemical reactant comprising the steps of:

hybridizing a biochemical specimen with a loop-structured nucleic acid probe on a biochip to form a double-chained complex of nucleic acid or nucleic acid-like structures, wherein

- a) said loop-structured nucleic acid probe is arrayed on one or more electrodes provided on a surface of a substrate or a substrate analog,
- b) a free end of said loop-structured nucleic acid probe is not fixed to the surface of the substrate or the substrate analog, or
- c) a principal part of said loop-structured nucleic acid probe which binds complementarily with a biochemical specimen is located on a side of the substrate on or near a surface of the substrate or the substrate analog, and
- d) ~~said loop-structured nucleic acid probe is pre-modified with a first label selected from a group consisting of magnetic particles, ceramic fine particles, and semiconductors is attached to said loop-structured nucleic acid probe prior to hybridization; and~~

detecting and/or discriminating said double-chained complex by means of at least one of electrical, magnetic, and optical changes on a the surface of the biochip.

25. (Currently Amended) The method of claim 24 further comprising a step of attaching modifying with a second label either during or after hybridization to one or both of the biochemical specimen and the loop-structured probe nucleic acid, wherein said second label is selected from the group consisting of magnetic particles, ceramic fine particles, and semiconductors, and wherein said second label is attached modifying step takes place before the detecting/discrimination step.

26-27 (Canceled).

28 (New) The method of claim 24 wherein attaching the first label takes place in two or more stages in which attaching the first label is followed by attaching a separate label targeting the first label.

29 (New) The method of claim 25 wherein attaching the second label takes place in two or more stages in which attaching the second label is followed by attaching a separate label targeting the second label.